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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,369	11/19/2001	Gregory Alan Whitlow	10541-273	1119

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EXAMINER	
FORD, JOHN K	
ART UNIT	**PAPER NUMBER**
3753	

DATE MAILED: 08/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/989,369	WHITLOW ET AL.
	Examiner	Art Unit
	John K. Ford	3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 5-19-04.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☑ Claim(s) 2,4,8-11,16,18,22-28 and 32-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☑ Claim(s) 2,4,8-11,16,18,22-28 and 32-35 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☑ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

Applicant's response of May 19, 2004 has been carefully considered. Extensive amendments have been made to claims 2 and 16.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim2, 4, 8-11, 16, 18, 22-28 and 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the matter which applicant regards as the invention.

In independent claims 2 and 16 the Examiner is having difficulty reconciling the limitations that the first and second curved appendages are only attached to the nose end adjacent to one of the pair of sides. In the specification, page 6, line 3, it states that appendages 41a and 41b are attached to nose ends 21 and on page 6, lines 6-8 that each of the appendages 41a and 41b "are integrally formed from the flat wall portions 25". The word "only" in claims 2 and 16 appears to conflict with the disclosure. In other words, it is unclear how the appendages could only be attached to the nose ends 21 and at the same time be integrally ~~forward~~ formed from the flat wall portions 25. The word "only" in the claims would exclude integral formation from the flat wall portions, would it not?

Note claims 4 and 18 depend from cancelled claims. For purpose of rejection here they are assumed to depend from claims 2 and 16, respectively.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 8-11, 16, 18, 22, 24-28 and 32-35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-28226.

See Figure 3(c) in particular the slot denoted "10i".

Regarding claims 8-11 and 25-28, Figure 3(c) is clearly only a partial view of one nose of the tube. As evidenced by Figure 3(A), it is clearly within the contemplation of the invention to form both noses of the tube with the identical appendages, and to have done so would have been obvious so that the heat exchanger would function the same regardless of airflow direction. (i.e. orientation).

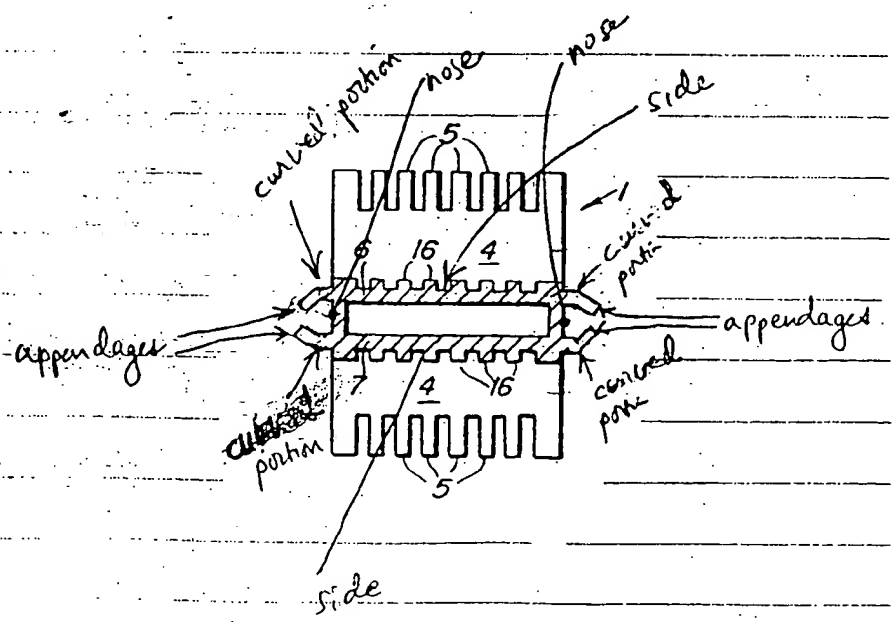
Regarding claims 22-24, in claims directed to a condenser apparatus per se (claim 16), method of use limitations (claims 22-24) are not extended patentable weight. See MPEP 2114, incorporated here by reference.

Claims 2, 4, 8-11, 16, 18, 22, 24-28 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-28226 as applied to claim 2 above, and further in view of O'Connor (3,692,105) or Yoshii (5653283) or Haussman (5,251,692).

Each of O'Connor, Yoshii (col. 4, lines 32-34) or Haussman teach forming the upstream and downstream nose portions of a tube with identical structures. To have formed the tube (Shown partially in Figure 3 (c)) of JP '226 with identical structures (shown at 10i) on both the upstream and downstream nose portions of the tube would have been obvious. Such symmetry assures that the heat exchanger will perform predictably no matter what orientation the installer places the device in.

Claims 2, 4, 8-11, 16, 18, 25-28 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of O'Connor and Yoshii et al (5,653,283).

O'Connor shows straight "appendages" at each end of the tube which project outwardly parallel to major cross-section axis of the tube. To have curved each of these projections in O'Connor towards one another as taught by Yoshii Figure 1 at "4f" would have been obvious to improve air flow as discussed in col. 5, lines 5-10, by making the transition less abrupt than a blunt end would be. Such an improved curving of airflow would advantageously reduce the airside pressure drop through the heat exchanger. The modification is shown below



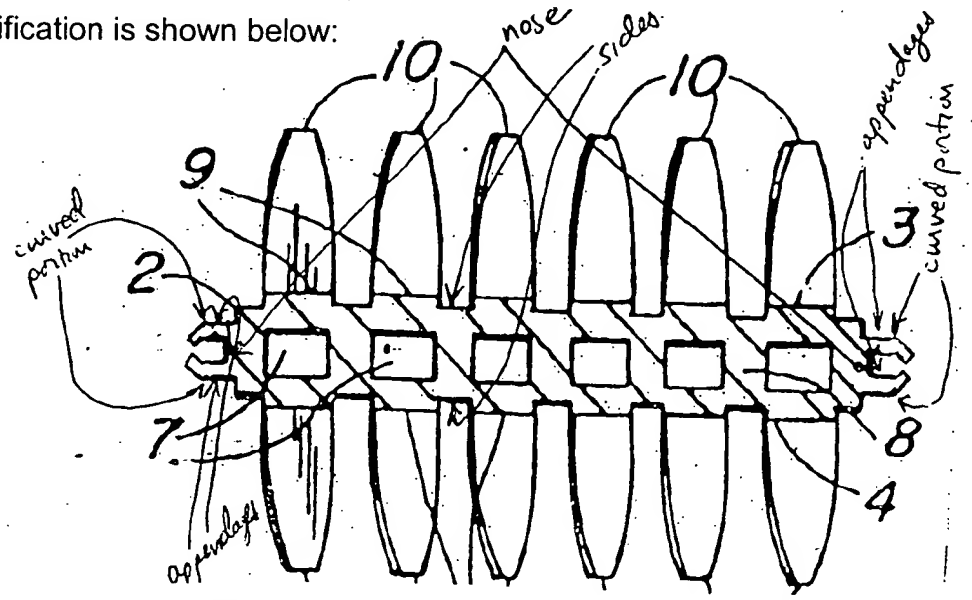
Regarding claim 8, O'Connor shows appendages at each end of the tube (a total of four) and Yoshii explicitly teaches identical treatment of the inlet and outlet faces in col. 4, lines 32-34. Such treatment advantageously permits the heat exchanger to be installed in either orientation without airflow problems occurring due to an asymmetrical construction of the appendages.

Regarding applicant's assertions that the proposed rejection would "change the principle of operation" of the references is disagreed with. The airflow resistance would be reduced regardless of the disposition of the fins. Clearly in the modified device one would have the advantage of using larger air-side fins such as taught by Yoshii et al if one desired. No "gripping tool" appears to be disclosed in O'Connor.

Claims 3, 4, 8-11, 16, 18, 25-28 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of DT'069 and Yoshii et al. (5,653,283).

DT'069 shows straight "appendages" at each end of the tube which project outwardly parallel to major cross-sectional axis of the tube. To have curved each of these projections in DT'069 towards one another as taught by Yoshii Figure 1 at "4F" would have been obvious to improve air flow as discussed in col. 5, lines 5-10, by making the transition less abrupt than a blunt end would be. Such an improved curving of the

airflow would advantageously reduce the air-side pressure drop through the heat exchanger. The modification is shown below:



Regarding claim 8, DT'069 shows appendages at each end of the tube (a total of four) and Yoshii explicitly teaches identical treatment of the inlet and outlet faces in col. 4, lines 32-34. Such treatment advantageously permits the heat exchanger to be installed in either orientation without airflow problems occurring due to an asymmetrical construction of the appendages.

Regarding applicant's remarks, see the Examiner's remarks immediately above in regard to the rejection based on O'Connor/Yoshii et al. The same remarks apply here because applicant's arguments are, also verbatim, the same. The Examiner sees no disclosure of an "engaging tool" in DT'069.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claim 16 above, and further in view of EP 0881448.

Each of the prior art references relied upon above, alone or in the explained combination, teaches the structure of the heat exchanger claimed but not necessarily

the end use of that structure as a condenser in an automobile. EP'448 fairly teaches that heat exchangers such as the type shown by the prior art can be used as a refrigerant condenser in any automobile or a residence. See paragraph-spanning col. 14-15.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to John Ford at telephone number 703 308-2636.

John K. Ford
Primary Examiner